

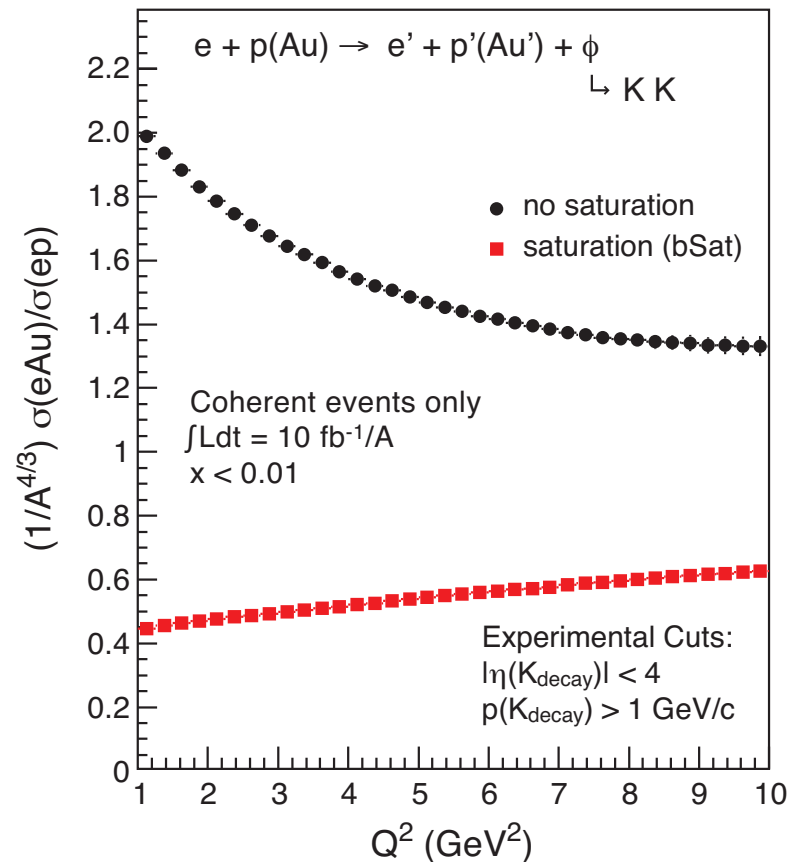
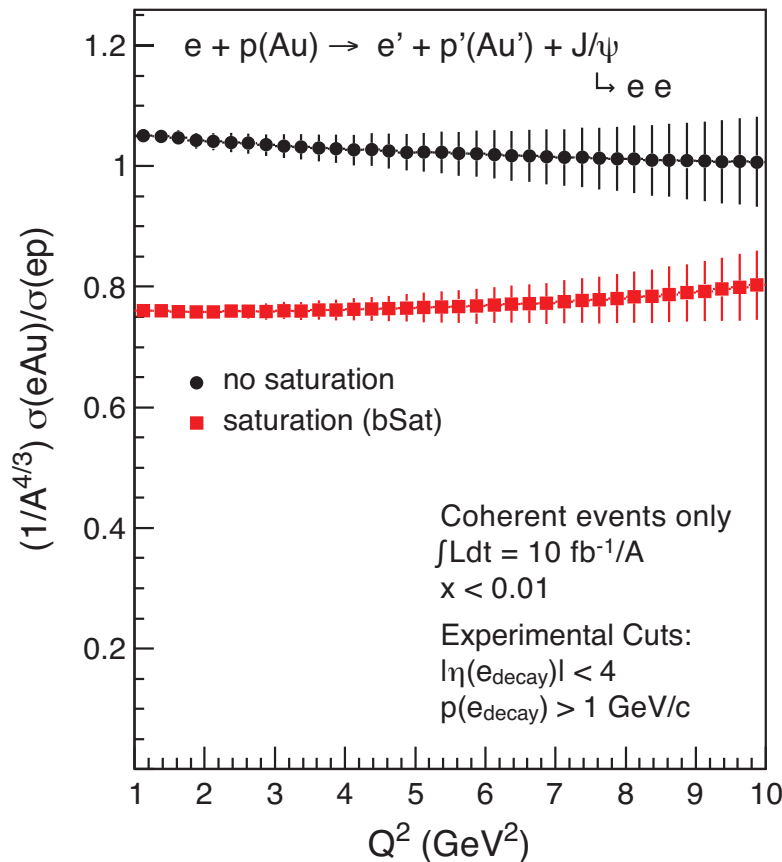
Diffractional VM Production in 15x100 GeV with Sartre 1.2

TT & TU

March 27, 2014

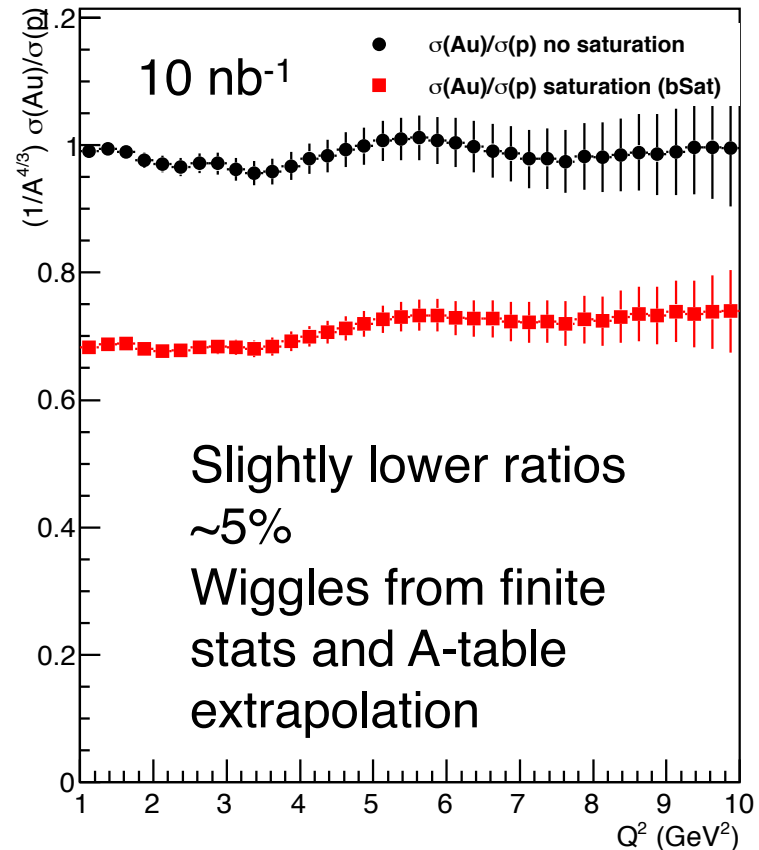
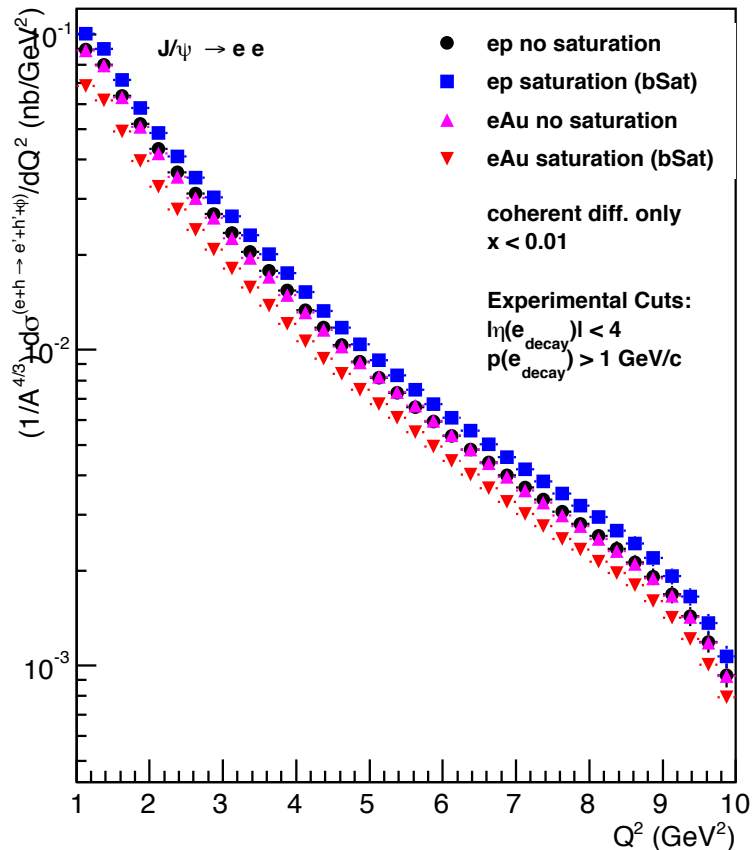
White Paper: $d\sigma/dQ^2$

Pre Release Version of Sartre
Run at 20x100 GeV, 10 nb⁻¹



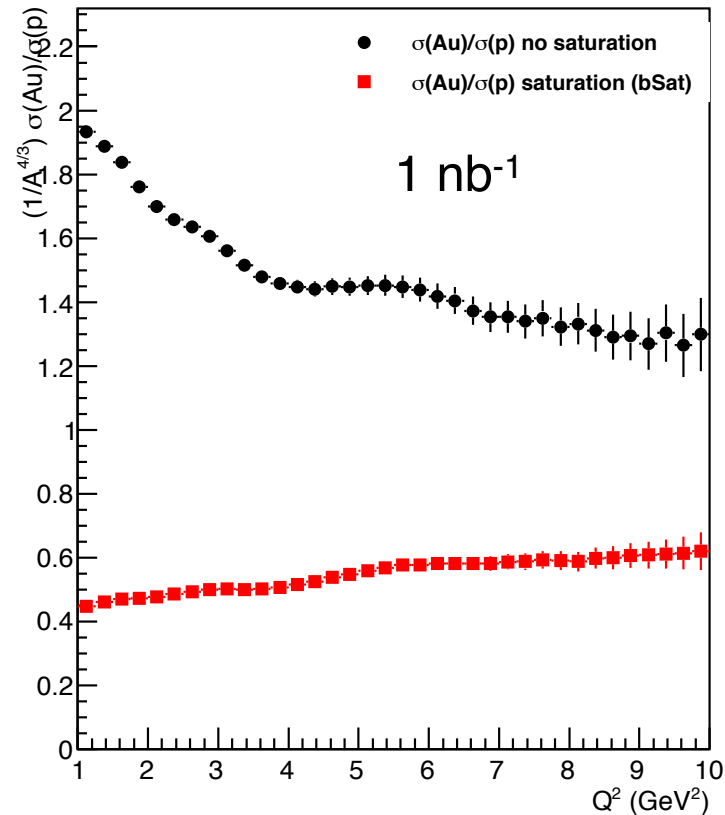
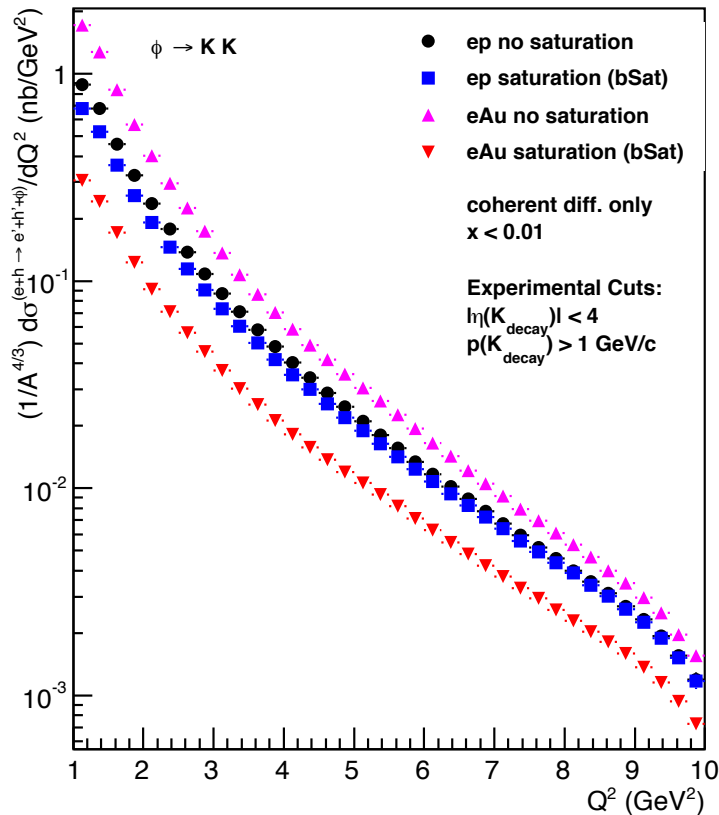
New: J/ψ $d\sigma/dQ^2$

Sartre 1.2, improved tables & correction handling
Run at 15x100 GeV



New: ϕ $d\sigma/dQ^2$

Sartre 1.2, improved tables & correction handling
Run at 15x100 GeV

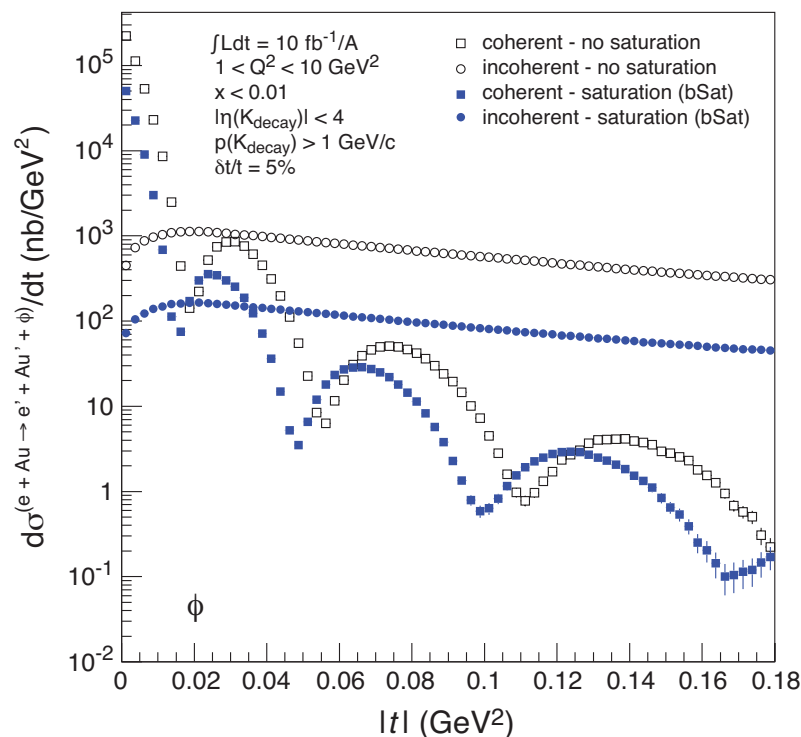
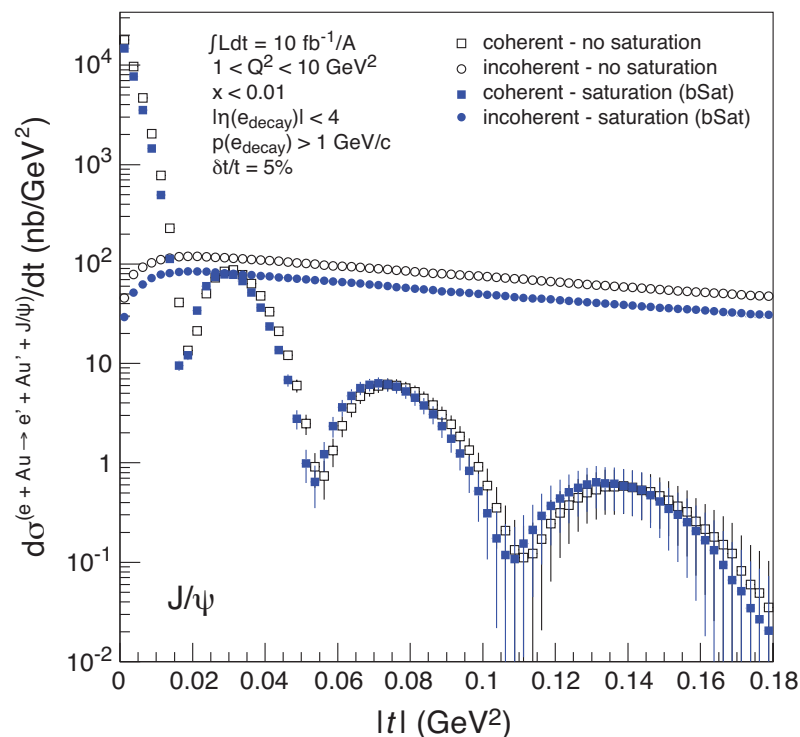


Smoothing for final plot: find reasonable fit and take ratio

White Paper: $d\sigma/dt$

Pre Release Version of Sartre

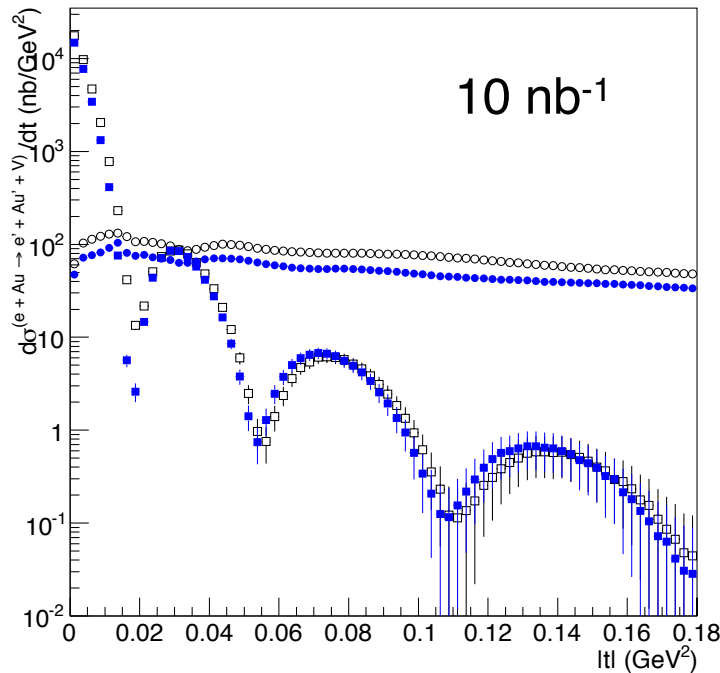
Run at 20x100 GeV, 10 nb^{-1}



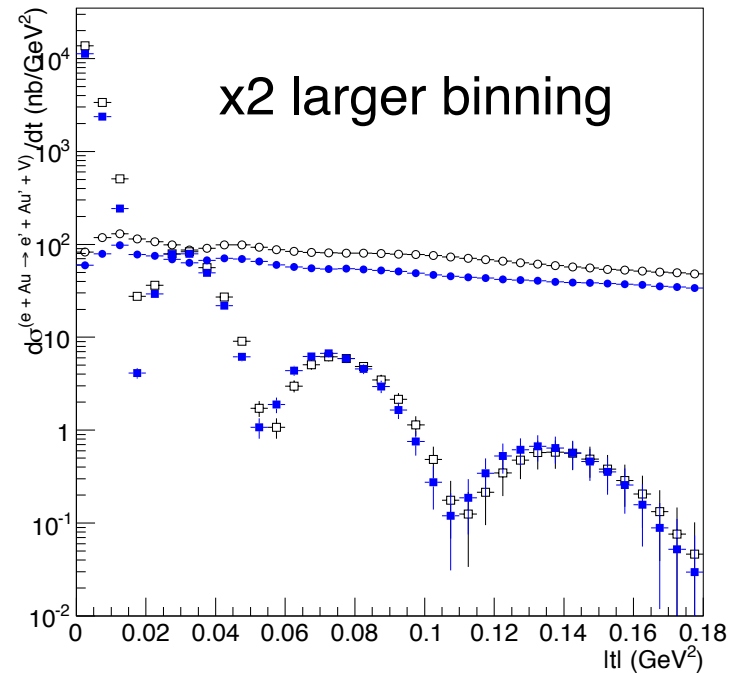
New: J/ψ $d\sigma/dt$

Sartre 1.2, improved tables & correction handling
Run at 15x100 GeV

coherent



coherent



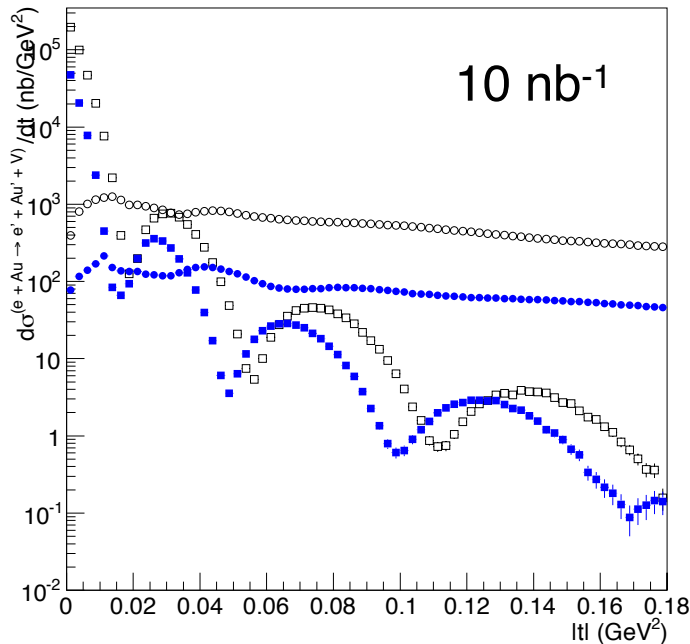
For Design Doc: Use coarser binning for incoherent
and $|t| > 0.115$ GeV²

Wiggles in incoherent “seem” real ...

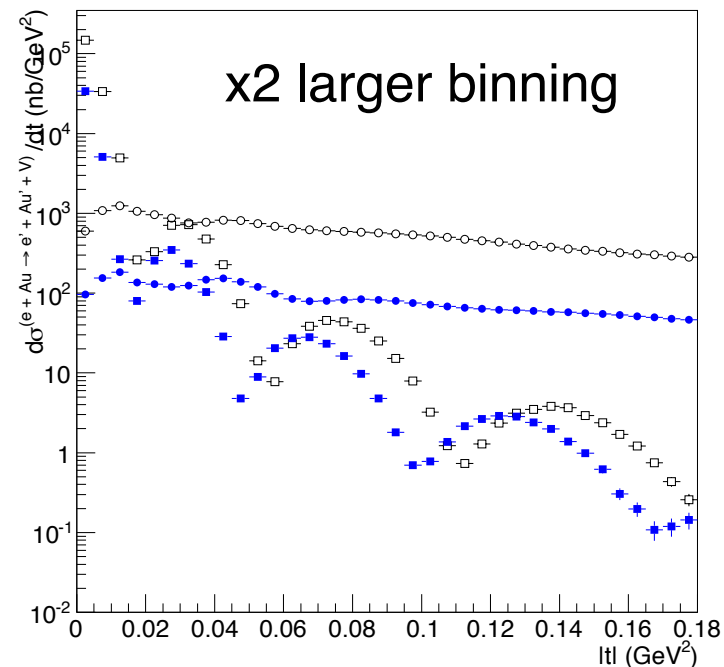
New: ϕ $d\sigma/dt$

Sartre 1.2, improved tables & correction handling
Run at 15x100 GeV

coherent



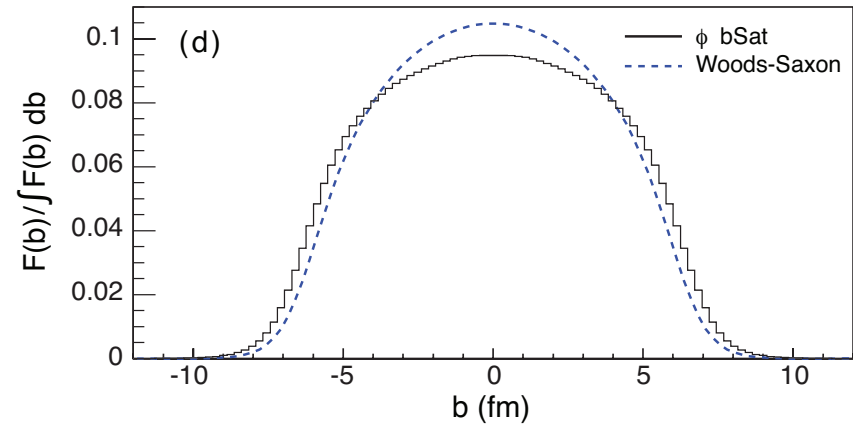
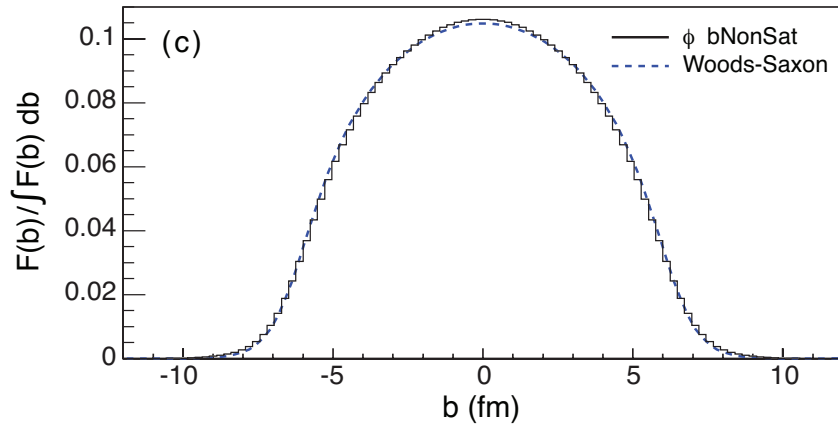
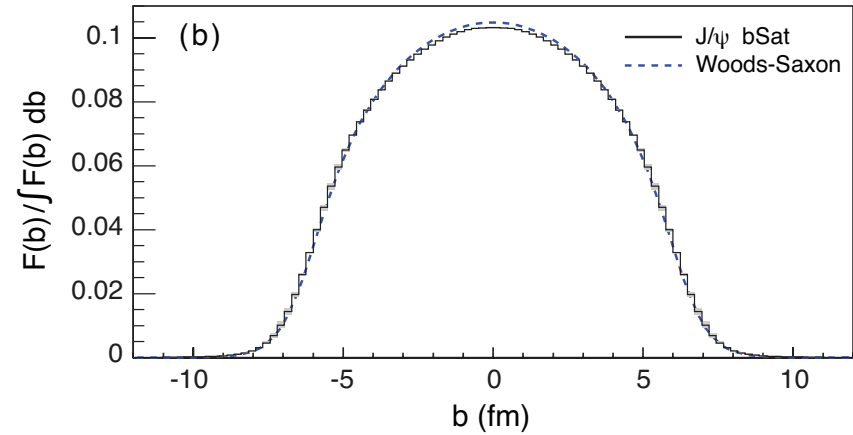
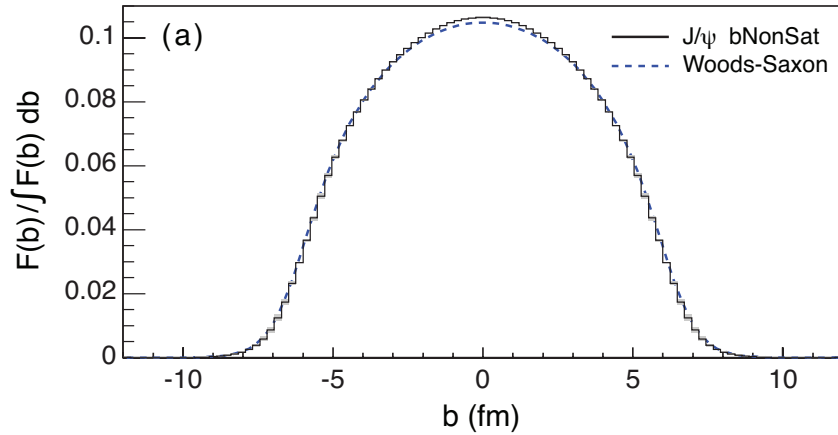
coherent



For Design Doc: Use coarser binning for incoherent
and $|t| > 0.115$ GeV²

White Paper: Source distribution $F(b_T)$

Almost negligible difference in $d\sigma/dt$ for 20×100 and 15×100 .
Not worth the effort. Keep WP version but improve appearance



Document Updates

For WP

- Only add source distributions. Do not change distributions. Difference too small.

For DD

- Use 15x100 (except source distribution)

Suggestions by EIC -Advisory:

- the ratio $\sigma_{\text{diff}}/\sigma_{\text{tot}}$ plot versus W^2 . At HERA the observed approximate constant behavior was striking feature; saturation provided a simple explanation. Can one study this as a function of A ?

see Tobias' talk

- vector production: at HERA both the b -slope (transverse radius) and t -slope (Pomeron slope) as function of Q^2 have provided important information on the transverse shape. Can this be measured, how does this vary with A ?

Coherent is not simple slope! Could use $\langle r \rangle$ from source distribution, not sure about variation in Q^2 . A varies according to input Glauber values - nothing magical in model.